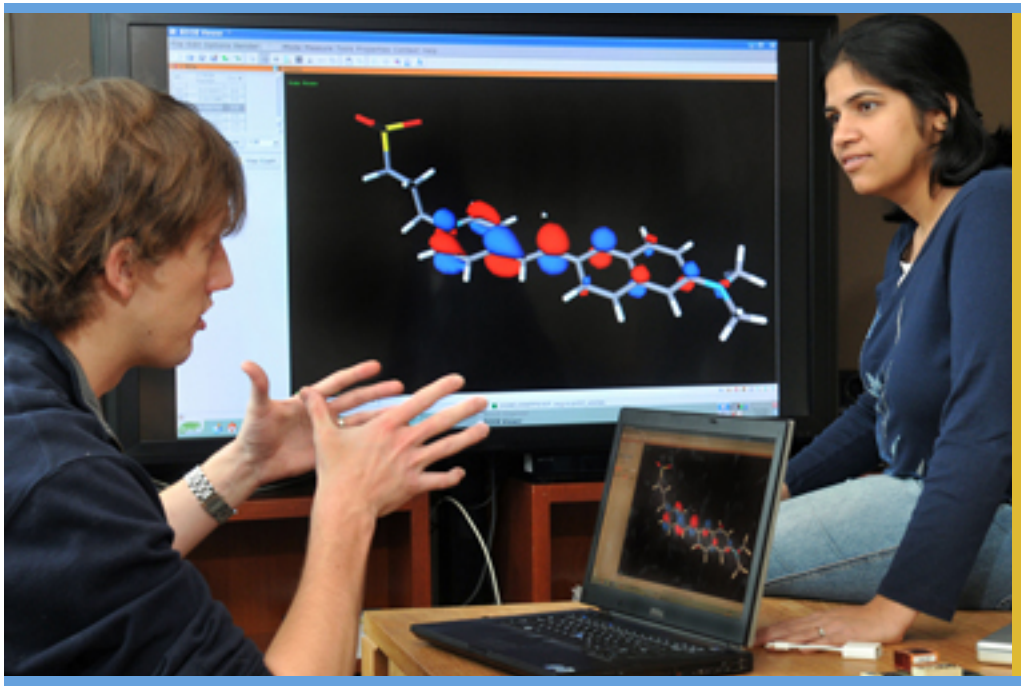
Argonne NATIONAL LABORATORY



ALCF Early Science Program

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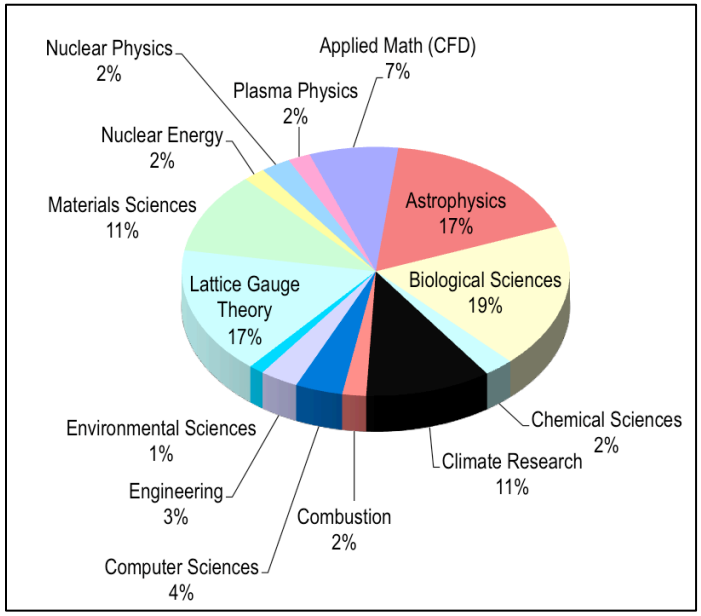
Background on ALCF-1

- 556-teraflops IBM Blue Gene/P
- 2009 INCITE Allocations
  - 28 projects
  - 400 M CPU-Hours
- 2010 INCITE Allocations
  - 656 M CPU-Hours



ALCF-2 Early Science Program

In early 2012 the ALCF will be installing at least 10PF of a next- generation Blue Gene. We are asking the community to help us make this deployment as successful and productive as possible.

- Why Early Science?
  - Helps us shake-out the system and software stack using real applications
  - Develops community and ALCF expertise on the system
- Goals of the Early Science Program
  - A stable and well- documented system moving into production
  - Exemplar applications over a broad range of fields
  - At least 2 billion core-hours to science

Next-Generation Blue Gene

Primary Focus
Exploiting the increased per-node parallelism

- Nodes
  - Higher levels of HW parallelism
  - Applications expecting approximately 10x performance/node
  - Twice the memory/core
- Interconnect
  - Continuing the Blue Gene tradition of a very strong interconnect
- I/O
  - Optimizing the end-to-end I/O software stack
  - Targeting 240 GB/s aggregate peak BW

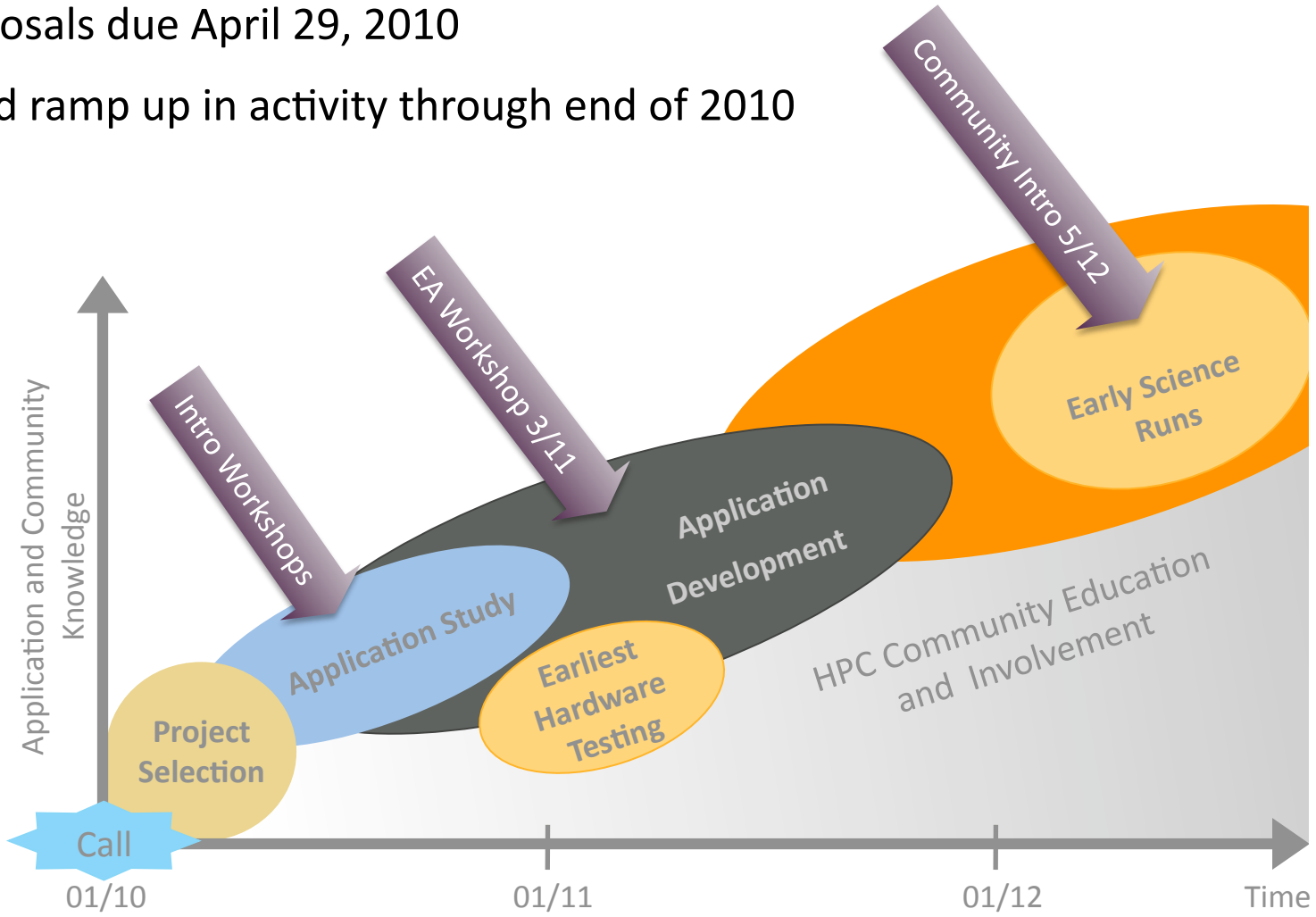
Full Machine Detail from NDA with IBM

Participation in the Program

- Benefits
  - Committed time of an ALCF staff member
  - LCF post-doc devoted to project
  - Jump start with new hardware
  - Access to significant compute resources for science
- Expectations
  - High impact science
  - Commitment of project staff to see project through
  - Pursue NDA with IBM
  - Work with ALCF Staff to:
    - identify and diagnose problems
    - document and report progress

Early Science Program Timeline

- Call Opens January 2010
- Proposals due April 29, 2010
- Rapid ramp up in activity through end of 2010



Proposals Must Include:

- Description of science problem and the impact
- Target application and its current capabilities
- Development requirements
  - Science
  - Code
  - Expected challenges of tasks
- Best estimates for compute resources needed for science and development work
- Information on current funding sources and expected funding over the next 2 years
- A length of approximately 6 pages
- ALCF may contact applicants for further information

Key Dates

- Submit proposals online at:
  - http://esp.alcf.anl.gov
- Submit questions to:
  - earlyscience@alcf.anl.gov

Call for Proposals
January 2010

Proposals Due
April 29, 2010